

REMARKS

Claims 1, 2, 4-7, 14-20, 25-27, and 29-32 are now pending in the application. Claims 3 and 28 have been canceled. Claims 1, 14, and 25 have been amended. Basis for the amendments can be found throughout the specification, claims and drawings originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-3, 5-7, 14-16, 18-20, 25, 26, 28, and 30-32 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Thomas (U.S. Pat. No. 6,697,642). This rejection is respectfully traversed.

Referring to Claim 1, Thomas does not show, teach, or suggest feedback that includes relative strength information regarding a first signal with respect to a second signal.

Thomas teaches a wireless communications apparatus that includes a directional beam antenna. The wireless communications apparatus also includes a signal quality measuring unit that determines the signal strength of a received signal (col. 8, line 3). The signal strength is stored for comparison with a later received signal and/or compared with a threshold level. Radiation output from the antenna may be formed into a relatively narrow beam and steered to a desired direction (col. 8, line 26). The antenna is initialized to operate in an omni-directional mode in order to set up communication with at least one base station. A search is then initiated for a beam direction providing optimum signal quality for communications between a mobile station

and a base station (col. 10, line 31). The omni-directional antenna path is divided into respective half-plane directions to determine in which half-plane the greatest signal strength is received. The antenna is first steered so that it is focused on the first half-plane, and a signal strength reading is obtained. The antenna is then steered so that it is focused on the second half-plane, and another signal strength reading is obtained. Once the half-plane exhibiting the greatest signal strength is identified, that half-plane is further divided into two portions, and the process continues for a predetermined number of iterations (col. 11, line 1).

Neither the mobile station nor the base station taught by Thomas generates feedback that includes relative signal strength information regarding a first signal with respect to a second signal, as required by the claims. In other words, the mobile station does not rely on feedback from the base station in order to adjust a direction of the antenna, as taught by Applicant. As discussed above, the antenna begins in an omni-directional mode and continues to focus on portions of the remaining azimuth plane that exhibit the greatest signal strength. Such a procedure is time consuming and unnecessary when a position of a base station is already known. Additionally, the system taught by Thomas does not take into consideration the signal strength detected at the base station when the mobile station and base station communicate. Therefore, Thomas relies on the assumption that the signal strength detected at the mobile station and base station are consistent and sufficient for desirable operation with respect to the position of the directional beam antenna.

Applicants teach first directing a beam antenna of a base station in a line-of-sight direction with a mobile station having a known position. The mobile station measures

the signal strength along the line-of-sight path and transmits the feedback to the base station. The base station then transmits signals to the mobile station along one or more additional paths either individually or simultaneously so that the base station can determine signal strengths of different multipaths. Additionally, the mobile station is capable of communicating relative signal strength to the base station with a single bit. Since the base station functions to detect signal paths that potentially have a higher signal strength, a single bit is sufficient to indicate an increase or decrease in signal strength between two or more multipaths. Unlike the system taught by Thomas, this avoids long and complicated processing and quickly identifies alternate multipaths exhibiting higher signal strengths.

Claims 2 and 4-7 depend directly from Claim 1 and are allowable over Thomas for the same reasons.

Referring to Claim 14, Thomas does not show, teach, or suggest feedback that includes relative strength information regarding a first signal with respect to a second signal.

The arguments made above with respect to Claim 1 are equally applicable to Claim 14. Neither the mobile station nor the base station taught by Thomas generates feedback that includes relative signal strength information regarding a first signal with respect to a second signal. The mobile station does not rely on feedback from the base station in order to adjust a direction of the antenna. The system taught by Thomas does not take into consideration the signal strength detected at the base station when the mobile station and base station communicate. Therefore, Thomas relies on the assumption that the signal strength detected at the mobile station and base station are

consistent and sufficient for desirable operation with respect to the position of the directional beam antenna.

Claims 15-20 depend directly from Claim 14 and are allowable over Thomas for the reasons cited above.

Referring to Claim 25, Thomas does not show, teach, or suggest feedback that includes relative strength information regarding a first signal with respect to a second signal.

The arguments made above with respect to Claim 1 are equally applicable to Claim 25. Neither the mobile station nor the base station taught by Thomas generates feedback that includes relative signal strength information regarding a first signal with respect to a second signal. The mobile station does not rely on feedback from the base station in order to adjust a direction of the antenna. The system taught by Thomas does not take into consideration the signal strength detected at the base station when the mobile station and base station communicate.

Claims 26-27 and 29-32 depend directly from Claim 25 and are allowable over Thomas for the reasons cited above.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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